Forbes
594.0

To H. C. Lea
with the best regards
of Edward Dowden

FAUNA MONENSIS.

CLASS MOLLUSCA.

ISAAC LEA COLLECTION

MALACOLOGIA MONENSIS.

A

CATALOGUE

OF

THE MOLLUSCA

INHABITING

The Isle of Man

AND THE NEIGHBOURING SEA.

By EDWARD FORBES,

FOR. SEC. B. S.

PRESIDENT OF THE ROYAL PHYSICAL SOCIETY,

&c.

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TO

ROBERT JAMESON, F.R.S.L. & E., &c. &c.

REGIUS PROFESSOR OF NATURAL HISTORY IN THE UNIVERSITY OF EDINBURGH,

THIS LITTLE BOOK

IS RESPECTFULLY DEDICATED

BY

HIS SINCERE ADMIRER AND ATTACHED PUPIL,

EDWARD FORBES.

PREFACE.

An insulated tract of land, such as the Isle of Man, always presents a favourable field for the observations of the naturalist, especially when, as in this case, it furnishes a sort of commentary on the natural history of the surrounding kingdoms. This circumstance, connected with the desire of investigating the productions of my native country, has induced me for some time back to collect materials for the natural history of that island, both its Fauna and its Flora. These I propose publishing in the form of catalogues, and commence with the Mollusca, that class being first completed.

My object in the following pages is to give a catalogue of all the species I have observed in the Isle of Man and the neighbouring sea, with their synonyms and remarks, critical or descriptive, in such cases as may appear necessary or useful. Wherever I am acquainted with the animal (it not having been noticed before), I have given such information as I possess on the subject; even though in many cases that information be limited to noting the colour only: every note on a molluscous animal, in the present state of the science, having a certain value. The synonyms are given, because they are not fully given in British works on these animals: but for that reason, except when absolutely necessary to elucidate some particular species, I conceive they have no business in a provincial Fauna or Flora, serving only uselessly to swell the book. The same remark applies to superfluous descriptions.

In the arrangement, I have followed in general Rang's Manuel; not because I look upon that arrangement as complete, but because the Fauna of a small district, such as the Isle of Man, is too

confined to exhibit the grand divisions in philosophical connection. As regards, however, the important distinctions of *form* and *aggregation of forms*, of *species* and *genus*, I have thought it right to exercise my own judgment. Wherever I have used the term *sub-species*, I use it in the sense of a *permanent variety*. The negro is a *sub-species* of the species *man*. A *sub-species* has no independent specific existence, yet has a *permanent specific appearance*, though passing into, and propagating with the other forms, whether sub-species, or simple varieties included in the particular species to which it belongs. A *species*, on the other hand, is defined, unalterable, original, approaching, but never uniting. *Varieties* are forms depending on local or accidental causes, diverging from the normal type, but often, and with facility returning to it. As regards character, certain organs are specific in some genera or even families, and generic in others. Thus the eye is specific in the family Naticidae, generic in most of the Gasteropodous tribes. So also with colour and habit. Colour appears to be specific in Natica, generic in Fusus. This law

prevails equally in the vegetable as in the animal kingdom, and if rightly investigated would clear up many of the difficulties attending the discrimination of species, both in Zoology and Botany ; difficulties which have arisen in consequence of many supposing that certain organs are of equal importance in all animals and plants, and that colour and habit are always accidental.

21, Lothian Street,
Edinburgh, February 28, 1838.

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V. Alten	D' Orbigny	Brugiere
Costa	Ocken	Gmelin
Da Costa	Leach	Lightfoot
De Gerville	Geoffroy	Retzius
Ocken	Studer	Poiret
Say	Renieri	

MALACOLOGIA MONENSIS.

CLASS. CEPHALOPODA.

Order. Cryptodibranchia.

Family. Octopoda.

I. Eledone, *Leach.*

1. Pennantii.

Sepia octopodia, *Pennant.*—Octopus octapodia, *Fleming.*

Rare. Dredged at Ballaugh.

Fam. Decapoda.

II. Loligo, *Lam.*

1. vulgaris.

Loligo vulgaris, *Lam.*—Sepia loligo, *Lin.*

Rare. At Douglas.

III. Sepia, *Lin.*

1. officinalis, *Lin.*

The 'bone' is not unfrequently cast on shore, both on the east and west coasts.

Order. Foraminifera.*

Fam. Helicostegea.

IV. Polystomella, *Lam.*

1. crispa.

Polystomella crispa, *Lam.*—Nautilus crispus, *Lin. Mont. Flem.*—Vorticialis crispa, *Blainv.*

Among sand in Douglas Bay, common.

V. Rotalia, *Lam.*

1. Beccarii.

Rotalia Beccarii, *Lam.*—R. communis, *D'Orbig.*

α. R. Beccarii, *Lam. Flem.* Nautilus Beccarii, *Mont.*

β. R. Beccarii-perversus, *Flem.* (Nautilus) *Mont.*

With the last. Both forms not rare.

VI. Discorbis, *Lam.*

1. vesicularis.

Discorbis vesicularis, *Lam.*—Lobatula vulgaris, *Flem.*—Serpula lobata, *Mont.*

On shells and fuci, very common.

* Though the analogy between the shells of this order and the Nautili is very great, there can be little doubt that there is but small affinity between the animals, yet, for the present it is convenient to retain them in the class Cephalopoda until more is known on the subject. *(See Desjardins, Ann. des Sc. Nat.* 1835.)

CLASS. GASTEROPODA.

Order. Nudibranchia.

Fam. Doridea.

VII. Doris, *Lin.*

1. Flemingii.

Doris nigricans, *Fleming.*

Animal oval, with seven or eight branchial plumes, and two annulated tentacula: the mantle covered with filiform papillae.

α. purple-brown, mottled: branchiae white, mottled with purple above, white beneath: foot whitish.

β. entirely white, branchial plumes more obtuse.

Under stones at spring tides, Ballaugh, not common.

I have changed the specific appellation of this animal as the name given to it by the discoverer had been previously applied to another species by Otto.—(*Nov. Act. Acad. Nat. Cur.* xi. p. 275.)

Fam. Tritoniacea.

VIII. Tritonia, *Cuv.*

1. Hombergi, *Cuv.*

α. dorso purpureo.

β. dorso flavo.

Frequent in deep water on the north coast: the yellow variety is generally larger than the purple,

(often six inches long) and has the branchiae smaller: it is perhaps distinct. The young of the purple form has the back bordered with white, and the branchiae not continuous.

IX. Melibaea, *Rang*.

Subgenus, "Doto. *Ocken*."? head not furnished with a membranous veil.

1. fragilis, nov. sp.—*Animal corpore oblongo, griseo-fusco; dorso plano; branchiis lateralibus in seriebus sex digestis.* Lon. $\frac{1}{4}$. Lat. $\frac{1}{8}$.

Animal greyish-brown, with two filiform tentacula protruding from trumpet-shaped basilar sheaths; no eyes; six branchiae on each side, diminishing in size towards the posterior extremity. Each of these branchiae is subglobose in form, and composed of five or six regular whorls of globules, which globules are in themselves of a granular structure. These branchiae are pedunculate, but not furnished with sheaths at their bases, and the animal has the power of casting them off when touched or otherwise irritated. The foot is very narrow, and adapted for clasping the stems of corallines. The anus and organs of generation are on the right side. When put into a vessel of salt water it readily creeps up the sides, or up any corallines with which it may be furnished, but on the least disturbance it retracts its tentaculae within their sheaths, and not unfrequently drops a branchus.

On corallines in deep water at Ballaugh, not rare.

Fam. Glaucea.

X. Eubranchus, nov. gen. *Corpore* ovato, convexiusculo ; *tentaculis* quatuor ; *oculis* nullis ; *dorso branchiis* ovatis instructo.

1. tricolor, n. s.

Corpore albo-carneo ; branchiis pyriformo-ovatis tricoloribus. Long. $\frac{1}{2}$. un. Lat. $\frac{1}{4}$.

Animal pinkish-white, ovate, with four true tentacula, the two upper ones longest. It has no eyes, and the back is closely covered with large translucent, subpyriform, homogeneous branchiae, which are remarkable for their brilliant colouring, being tipped with bright opaque yellow, whilst their centres are deep purple, and their bases rose-pink.

The nearest allies of this species are the Doris longicornis, and Doris coerulea of Montagu, which constitute the genus Montagua of Fleming. From that genus it is excluded by its ovate form, by the absence of eyes and lateral papillae, and by the different arrangement of the branchiae. Regarding those characters as generic in this family, I have deemed it necessary to create a genus for the reception of this very beautiful animal, which I had the good fortune to dredge in 20 fathoms water on the coast of Ballaugh, in September 1836. It was taken when adhering to a coralline.

Order. Tectibranchia.

Fam. Acera.

XI. Bulla, *Lin.*

1. lignaria.

Bulla lignaria, *Lin.*—Bulla scabra, *Mull.* Ramsay. Mr. Wallace.

XII. Bullaea, *Lam.*

1. aperta.

Bullaea aperta, *Lam.*—Bulla aperta, *Lin. Flem.* Bullaea Planchiana, *Cuv.*

The animal is described by Cuvier.

In the stomach of a haddock, caught off Douglas, October 1837.

Order. Pulmonifera.

Fam. Limacea.

XIII. Limax, *Lin.*

1. cinereus.

Limax cinereus, *Lin.*—(Shell) Limacellus Parma, *Turt.*

Frequent.

2. agrestis.

Limax agrestis, *Lin.*—(Shell) Limacellus obliquus, *Turt.*

Common.

XIV. Arion, *Fer.*

1. empiricorum.

Arion empiricorum, *Fer.*—Arion ater, *Flem.* Limax ater, *Lin.*

Common.

Fam. Helicea.

XV. Vitrina, *Drap.*

1. pellucida.

Vitrina pellucida, *Drap. Flem. Alder*, &c.—Helix pellucida, *Mull.*—Helix elliptica, *Brown.* Wer. Tr.—" Helix diaphana, *Poiret*," *(Rossm.)*—" Helix limacoides, *V. Alten.*" *(Rossm.)*—" Hyalina pellucida, *Stud.*" *(Ferr.)*—Vitrina beryllina, *Pfeiffer.*—Vitrina Mulleri, *Jeff.*—Helicolimax pellucidus, *Fer.*

Under stones and amongst grass, common. Animal desc. by Nilson, &c.

XVI. Helix, *Lin.*

1. aspersa.

Helix aspersa, *Mull.*—Helix hortensis, *Penn.*—H. lucorum, *Pult.*—H. grisea, *Lin.?*

Animal described by Jeffreys.

Common everywhere in fields and gardens.

2. arbustorum, *Lin.*

Animal described by Jeffreys.

Damp shady places, not common.

3. nemoralis, *Lin.*

β. labro albo.

Common on walls, &c.

4. hispida, *Mull.*

β. H. concinna, *Jeff.*

Animal described by Jeffreys.

Both forms are common.

5. granulata.

Helix granulata, *Alder.*—H. hispida, *Mont. Flem.*—H. globularis, *Jeff.*—H. sericea, *Drap.*?

Animal described by Jeffreys.

Frequent in hedges and damp places.

6. caperata.

Helix caperata, *Mont.*—H. striata var. *Drap.*—H. intersecta, *Brard.*—H. thymorum, *Pfeiffer.*—H. crenulata Dilwyn.

Animal described by Jeffreys.

On Limestone at Castletown, rare.

7. ericetorum.

Helix ericetorum, *Mull.*—H. albella, *Penn.*—H. caespitum, *Pfeif.*

Animal described by Jeffreys.

On sandy banks by the sea at Kirk Michael.

8. rotundata.

Helix rotundata, *Mull.*—H. radiata, *Mont.*—" H. lineata, *Say*" *(Grataloup.)*

Animal described by Jeffreys.

Common under stones.

9. rupestris.

Helix rupestris, *Drap.*—H. umbilicata, *Mont.*

Animal described by Jeffreys.

On walls near Douglas, not common.

10. pulchella.

Helix pulchella, *Mull.*—H. paludosa, *Walker.*—" H. minuta, *Say*" (Fer.)—Turbo helicinus, *Lightfoot.*—Amplexus paludosus, *Brown.*—Vallonia rosalia, *Risso?*

β. Helix costata, *Mull.*—H. crenella, *Mont.*—Amplexus crenellus, *Brown.*

Though the Helix costata of Muller has for some time been considered a variety of Helix pulchella, M. Kickx proposes once more to separate them specifically on the ground of a (supposed) difference between the animals of the two forms. He says of Helix pulchella, " Incola lacteus, pallio luteolo, tentaculis inferioribus brevissimis ;" and of H. costata, " Incola rufus, pallio violaceo, tentaculis inferioribus vix (etiam sub lente) conspicuis ;" and supposes that Muller had similar reasons for separating the two as species. I have not, however, found these differences to exist either in the British specimens which I have examined, or in such as I had collected in France ; the animals of both forms agreeing with the description given by M. Kickx, of that of H. pulchella.

Not unfrequent under stones in damp places.

β. On walls.

11. crystallina.

H. crystallina, *Mull.*—H. vitrea, *Brown.*

Animal noticed by Jeffreys. Under stones. Rare.

12. cellaria.

H. cellaria, *Mull.*—H. nitida, *Drap. Flem.*

Animal described by Alder. Common.

13. nitidula, *Drap. Alder.*

Animal described by Alder.

At Ballaugh. Castletown, on limestone.

14. fulva.

Helix fulva, *Drap. Mull?*—H. trochiformis, *Mont.*—H. Trochilus, *Flem.*—"H. nitidula, *v. Alten*," *(Fer.)*—Test. jun. H. Mortoni, *Jeff.*

Animal noticed by Jeffreys. Loc. Glencrutchery.

XVII. Bulimus, *Brug.*

1. Acutus.

Bulimus acutus, *Drap.*—Helix acutus, *Mull.*—Turbo fasciatus, *Penn.*—Lymnæa fasciata, *Flem. (Ed. Enc.)*

Animal described by Jeffreys.

Sandy fields by the sea, Ballaugh. Limestone, Castletown.

XVIII. Achatina, *Lam.*—Subgenus Cionella, *Jeffreys.*

1. lubrica.

Achatina lubrica, *Menke. Mich.*—Cionella lubrica, *Jeff.*—Bulimus lubricus, *Drap. Flem.*—Helix lubrica, *Mull.*—Helix subcylindrica, *Lin.*—Cochlicopa lubrica, *Risso.*—Lymnæa lubrica, *Flem.* (Ed. Enc.)

Common under stones. Animal noticed by Jeffreys.

XIX. Succinea, *Drap.*

1. amphibia.

Succinea amphibia, *Drap.*—Succinea putris, *Flem.*—Helix putris, *Lin.*—Helix succinea, *Mull.*—Lymnæa succinea, *Flem.* (Ed. Enc.) "Succinea ovalis, *Say*" *Grateloup.*

On plants by pools. Animal described by Jeffreys.

XX. Clausilia, *Drap.*

1. rugosa.

Clausilia rugosa, *Drap.*—Clausilia perversa, *Flem.*—Helix perversa, *Mull.*—Turbo bidens, *Mont.*—Turbo nigricans, *Mat. and Rac.*—Odostomia nigricans, *Flem.* (Ed. Enc.)

Animal noticed by Jeffreys.

Walls near Douglas, and on limestone at Castletown.

XXI. Balea, *Gray.*

1. fragilis.

Balea fragilis, *Gray.*—Balea perversa, *Flem.*—Pupa fragilis, *Drap.*—"Clausilia fragilis, *Studer*," *Menke.*—Turbo perversus, *Lin.*—Odostomia perversa, *Flem.* (Ed. Enc.)

Animal noticed by Jeffreys.

Walls near Douglas.

XXII. Pupa, *Drap.*

1. marginata.

Pupa marginata, *Drap.*—Pupa muscorum,

Lin. Nils.—Alaea marginata, *Jeffreys.*—Jaminia marginata, *Risso.*

Animal described by Jeffreys.

At Castletown, on limestone.

2. umbilicata.

Pupa umbilicata, *Drap. Jeff.*—Pupa muscorum, *Flem.*—Turbo muscorum, *Mont.*—Jaminia muscorum, *Risso.*—Odostomia muscorum, *Flem.* (Ed. Enc.)

Animal noticed by Jeffreys.

Everywhere on walls and under stones.

3. pygmaea.

Pupa pygmaea, *Drap.*—Vertigo pygmaea, *Fer.*—Alaea vulgaris, *Jeff.*

Among grass, Douglas. Animal noticed by Jeffreys.

Fam. Auriculacea.

XXIII. Carychium, *Mull.*

1. minimum.

Carychium minimum, *Mull.*—Auricula minima, *Drap.*—Turbo Carychium, *Mont.*—Odostomia carychium, *Flem.* (Ed. Enc.)

Animal described by Jeffreys.

Among moss in damp places, especially near the sea.

XXIV. Auricula, *Lam.*

1. alba.

Auricula alba, *Jeffreys.*—Voluta alba, *Mont.*

Crevices of rocks at Kirk Santon Head. Rare. Animal milk white.

Fam. Lymnacea.

XXV. Planorbis, *Mull.*

1. contortus.

Planorbis contortus, *Mull.*—Helix contorta *Lin.*

Ditches in the Curraghs. Animal noticed by Jeffreys.

2. hispidus.

Planorbis hispidus, *Drap.*—P. albus, *Mull.*—P. reticulatus, *Risso.*

Ditches in the Curraghs. Animal noticed by Jeffreys.

3. imbricatus.

Planorbis imbricatus, *Mull.*—Planorbis imbricatus and cristatus, *Drap.* — Turbo nautilius, *Lin.*

At the Callane, Jurby. Animal noticed by Jeffreys.

4. spirorbis.

Planorbis spirorbis, *Mull.*—Helix spirorbis, *Lin.*—Planorbis vortex, *β. Drap.*

Ditch of the encampment at Ballacurry, Andreas. Near the Nunnery, Douglas. Mr. Wallace. The animal is noticed by Jeffreys.

XXVI. Lymnaea, *Lam.*

1. peregra.

Lymnaea peregra, *Lam. Drap.*—Limnea limosa, *Flem.*—Lymnaea putris, *Flem.* (Ed. Enc.) — Buccinum peregrum, *Mull.* — Helix putris, *Pen.*—Helix peregra, *Mont.*

In ditches, everywhere. Animal noticed by Jeffreys.

2. palustris.

Lymnaeus palustris, *Drap.* — "Lymnaea communis, *Leach*," *Jeff.*—Helix palustris, *Mont.*—Helix stagnalis, *β. Penn.*—Helix fragilis and fontinalis, *Don.* — Lymnaea leachiana, *Risso ?*

Muddy rivulets in the north. Animal noticed by Jeffreys.

3. minuta.

Lymnaea minuta, *Lam. Drap.*—Lymnaea fossaria, *Flem.* — Buccinum truncatulum *Mull.*—Helix fossaria, *Mont.*

Animal noticed by Jeffreys. M. Goupil, in his "Histoire des Mollusques, dans le Department de la Sarthe," (1835,) makes three species out of the L. minutus of Draparnaud, namely, 1st, Lymnaea gingivata, *Goupil;* 2d, L. truncatula, (to which he refers the Helix fossaria of Montagu;) and 3d, L. minuta.

Muddy ditches and ponds in the north.

XXVII. Physa, *Drap.*

Fontinalis.

Physa fontinalis, *Drap.*—Bulla fontinalis, *Lin.*—Planorbis bulla, *Mull.*

Animal described by Jeffreys.

At the Callane, Jurby.

Order. Pectinibranchia.

Fam. Turbonidae.

XXVIII. Melania, *Lam.* — Subgenus Eulima,* *Risso.*

1. Donovani.

Turbo subulatus, *Don.*—Phasianella subulata, *Flem.* — Helix subulata, *Mont.* — Pyramis subulatus, *Brown.* — Lymnaea subulata, *Flem.* (Ed. Enc.) — Melania Cambesedesii, *Payr.* ?

Dredged at Ballaugh. This is not the Eulima subulata of Risso.

2. elegantissima.

Turbo elegantissimus, *Mont.*—Turbo acutus, *Don.*—Turritella elegantissima, *Flem.*—Pyramis elegantissimus, *Brown.*—Lymnaea elegantissima, *Flem.* (Ed. Enc.)

In sand, Douglas bay. Scarce.

Subgenus ? Odostomia, *Flem.*

3. unidentata.

Odostomia unidentata, *Flem.*—Turbo unidentatus, *Mont.*—Voluta unidentata, *Mat.* and *Rae.*—Jaminia unidentata, *Brown.*

In deep water off Douglas. Rare.

* The description given by Phillippi of the animal of Melania distorta, *Deshayes*, (Helix polita of Montagu, and Eulima anglica of Sowerby,) is the only account of an animal of this subgenus with which I am acquainted :—" Animal rubrum, tentaculis longis subulatis, oculos parvos atros in basi externa gerentibus."

4. plicata.

Odostomia plicata, *Flem.*—Turbo plicatus, *Mont.*—Jaminia plicata, *Brown.*—Turbo conoideus, *Brocchi?*

Deep water. Rare.

5. spiralis.

Odostomia spiralis, *Flem.*—Turbo spiralis. *Mont.*—Voluta spiralis, *Mat.* and *Raek*, —Pyramis spiralis, *Brown*, (1st Ed.)—Rissoa spiralis, *Brown*, (2d Ed.)

In shell sand from Kiristal. Scarce.

XXIX. Rissoa, *Frem.*

1. parva.

Rissoa parva, *Col. de Cherres*, *Brown*, (2d edit.) — Cingula parva, *Flem.* — Scalaria parva, *De Blainv.*—Turbo parvus, *Mont.* —Turbo lacteus, *Don.*—Pyramis parvus, *Brown.*

On fuci and in sand, not uncommon. Mr. Gray has remarked, that Rissoa parva "has the power of emitting a glutinous thread, by which it attaches itself to floating sea weeds, and is enabled, when displaced, to recover its previous position."— *Proc. of Zool. Soc.* Part I. 1833.

2. alba.

Rissoa alba, *Brown*, (2d edit.)—Turbo albus, *Adams.*— Cingula alba, *Flem.*—Pyramis a bus, *Brown.*

Not rare on fuci. Perhaps a variety of R. parva.

3. communis.

Turbo striatus, *Adams.* — Rissoa striata, *Brown*, (2d edit.)—Cingula striata, *Flem.* —Helix striata, *Walker.*—Pyramis striatus, *Brown.*

Common on fuci. As there is a Rissoa striata (Phil. Test. Sic.) very distinct from this species, I have changed the name.

4. interrupta.

Rissoa interrupta, *Brown*, (2d edit.)—Turbo interruptus, *Adams.*—Cingula interrupta, *Flem.*—Pyramis interruptus, *Brown.*

Under stones at low water: extremely abundant on the north side of the island, but rare at the south and east, where its place is occupied by the next species.

5. cingilla.

Rissoa cingilus, *Mich.*—Turbo cingilus, *Mont.* —Cingula cingilla, *Flem.*—Turbo vittatus, *Don.*—Turbo graphicus, *Turt.*—Pyramis cingillus, *Brown.*

Common under stones at low water.

6. reticulata.

Rissoa reticulata, *Brown*, (2d edit.)—Turbo reticulatus, *Mont.* — Cingula reticulata, *Flem.*—Pyramis reticulatus, *Brown.*

In deep water. Rare.

7. cimex.

Rissoa cimex, *Brown*, (2d edit.) — Turbo cimex, *Lin.*—Cingula cimex, *Flem.*—Py-

ramis cimex, *Brown.*—Alvania Fremînvillia, *Risso.*—Rissoa cancellata, *Desm.*

One broken specimen from deep water on the north coast. Is not Chiagi mistaken in asserting that the animal of this species has no operculum?—*Mem.* 8, p. 214, tom. iii.

XXX. Paludina, *Lam.*

1. ulvæ.

Turbo ulvæ, *Penn.*—Cingula ulvæ, *Flem.*—Rissoa ulvæ, *Brown*, (2d edit.)—Pyramis ulvæ, *Brown.*—Paludina muriatica, *Lam.* Paludina balthica, *Nilson.*—Cyclostoma acutum, *Drap.*

The animal is described by Nilson.

Muddy places on the shore, near Castletown.

XXXI. Littorina, *Fer.*

1. littorea.

Littorina littorea, *Fer.*—Turbo littoreus, *Lin. Flem.*

The animal is described by Montagu. Common on stones at low water.

2. rudis.

Littorina rudis, *Menke.*—Turbo rudis, *Maton.*

β. Turbo jugosus, *Maton.*

With the last, common.

3. tenebrosa.

Turbo tenebrosus, *Mont.*

About Douglas, frequent.

4. Neritoides.

Littorina neritoides, *Fer.*—Nerita littoralis, (*Lin. ?*) *Mont.*—Turbo retusus and neritoides, *Lam.*—Neritoides littoralis, *Brown.*

Animal generally entirely yellow, sometimes with the head, tentacula, and edge of the mantle black.

On stones and wrack at low water, common.

XXXII. Lacuna, *Turton.*

1. pallidula.

Lacuna pallidula, *Turton.*—Nerita pallidula, *Mont.*—Natica pallidula, *Flem.*—Turbo pallidulus, *Turt.* (Conch. Dict.)

Animal milk-white.

On the north coast, frequent: on fuci at low water.

2. puteola.

Lacuna puteolus, *Turt.*—Helix lacuna, var. *Mont.*—Turbo puteolus, *Turt.* (Conch. Dict.)

Among sand in Douglas Bay, not uncommon.

3. quadrifasciata.

Lacuna quadrifasciata, *Turt.*—Turbo quadrifasciatus, *Mont.*

On fuci at low water, rare. North coast.

XXXIII. Skenea, *Flem.*

1. depressa.

Skenea depressa, *Flem.* — Helix depressa,

Mont.—Serpula cornea, *Adams.*—Delphinoidea depressa, *Brown.*

Animal white, translucent; head proboscidiform, but not furnished with a trunk; tentacula long, cylindric, transparent, with the eyes at their bases externally; eyes large; foot short; no cirrhi. It does not erect its shell when in motion, but drags it sideways. The tentacula, during progression, are in general turned back, or directed laterally.

Under stones at low water. Common.

2. divisa.

Skenea divisa, *Flem.*—Turbo divisus, *Adams.*

Very rare. From deep water off Douglas Head.

3. serpuloides.

Skenea serpuloides, *Flem.*—Helix serpuloides, *Mont.*—Delphnoidea serpuloides, *Brown.*—Valvata minuta, *Turt.*

Douglas. Not rare.

XXXIV. Valvata, *Mull.*

1. piscinalis.

Valvata piscinalis, *Lam.*—V. obtusa, *Pfeiff.*—Nerita piscinalis, *Mull.*—Turbo fontinalis, *Mont.*—Cyclostoma obtusum, *Drap.*—Helix piscinalis, *Gmel.*—Lymnæa fontinalis, *Flem.* (Ed. Enc.)

Testa junior. Valvata depressa, *Pfeiff.*

The animal is described by Nilson.

Ditches in the Curraghs. Common.

XXXV. Turritella, *Lam.**

1. terebra.

Turritella terebra, *Lam.*—Turbo terebra, *Lin.*

Frequently cast ashore (though without the animal) on the north coast. The Turritella turris of Basterot (Mem. de la Soc. d' Hist. Nat. de Paris, vol. ii.) has probably been confounded with this species on the British coasts.

Family. Trochidæ.

XXXVI. Phasianella, *Lam.*

1. pulla.

Phasianella pulla, *Payr.*—Turbo pullus, *Lin.*
Cingula pulla, *Flem.* — Tricolia pullus, *Risso.*

The animal is described by Montagu—also by Phillippi.

On fuci at low water during spring tides. Common in shell sand.

* Philippi says that the description of the animal of Turritella, as given by Blainville and Rang, (after D' Argenville,) is not correct, and amends it thus : — "Pes *integerrima* (non margine laciniato :) tentacula *parva obtusiuscula*, oculos in *basi externo gerenta*. Caput productum (*velo fimbriato nullo*) sed pallium margine interno fimbriatum et operculum corneum multistriatum margine ciliatum." The note by Montagu on the animal of Turritella terebra (Test. Brit. p. 274,) agrees with these observations of Philippi.

XXXVII. Trochus, *Lin.*

Subgenus. Trochus. Shell pyramidal, imperforate. Animal with the inter-tentacular lobes rudimentary.

1. papillosus.

Trochus papillosus, *Mat.* and *Rac.* — T. tenuis, *Mont.*—T. granulatus, *Lam.*—T. fragilis, *Pult.*

Animal with the head and foot white, with brown markings; tentacula white, with a brown line above; eye peduncles white; eyes blue; lateral lobes and filaments white; foot with a short filamental appendage, or lobe, at each of the anterior angles.

On the north coast, in deep water. Not common.

2. Ziziphinus.

Trochus ziziphinus, *Lin.*—T. conulus, *β. Phil.* — *β.* albus, " T. Lyonsii, *Leach*," *Flem.*—*γ.* purpureus.—Trochus violaceus, *Risso ?*

Animal with the sides of the foot dark orange-brown; head brown; tentacula brown; eye-peduncles white; filaments long, brown.

Frequent. *β.* and *γ.* are rare.

3. striatus.

Trochus striatus, *Lin.* — Trochus conicus, *Don.*—Trochus erythroleucos, *Turt.*

Animal white, the sides of the foot marked with black; tentacula and filaments, white.

Subgenus. Meleagris. Shell conoid, umbilicate. Animal with the intertentacular lobes developed.

4. magus.

Trochus magus, *Lin.*—Gibbula magus, *Risso*.

Animal having the sides of the foot marked with purplish brown, and bordered with yellow; head black; tentacula yellowish, annulated with black; inter-tentacular lobes orange, bordered with yellow; eye-peduncles orange above, white beneath; eyes blue-black; great lateral lobe and filaments yellow, the former with an orange spot at the side nearest the head.

On the north coast. Frequently cast on shore. Rarely taken alive by the dredge. Inhabits gravelly ground at a depth of twenty fathoms.

5. tumidus.

Trochus tumidus, *Mont.*—Trochus umbilicatus, *Walker*.

Animal white, with the sides of the foot marked with black; head black; tentacula, eye peduncles, intertentacular lobes, lateral lobes, and filaments, white.

In deep water. Common on all the coasts.

6. cinerarius.

Trochus cinerarius, *Lin.*—"T. lineatus, *De Gerv.*" *Cherres.*

Animal yellowish white, head and sides of the foot marked with black; tentacula annulated with black, margin of the mantle with a black edge.

At low water on stones. Common.

7. umbilicatus.

Trochus umbilicatus, *Mont.*—T. umbilicaris, *Penn.*

Animal white, head and sides of foot marked with black; tentacula annulated with black; margin the mantle spotted with crimson and yellow.

At low water, on the rocky parts of the coast. Common.

Family. Buccinidæ.

XXXVIII. Buccinum, *Lin.*

1. undatum.

Buccinum undatum, *Lin.*—Tritonium undatum, *Mull.*—β. Buccinum striatum, *Penn.*

The animal is figured by Muller.

Common. The variety β. is most frequent on the Manx coast. It is called by the natives *Mutlag*, and sometimes eaten boiled.

XXXIX. Purpura, *Adanson.*

1. lapillus.

Purpura lapillus, *Lam.*—Buccinum lapillus, *Lin.*

On rocks at low water. Abundant.

XL. Nassa, *Lam.*

1. reticulata.

Nassa reticulata, *Flem.*—Buccinum reticulatum, *Lin.*—Planaxis reticulata, *Risso.*

Cast ashore occasionally on the north coast. I have never seen it alive on the Manx shores.

2. macula.

Buccinum macula, *Mont.*—B. ascanius, *Lam.*—B. minutum, *Penn.*—B. asperulum,

Brocch.—Tritonium incrassatum, *Mull.*—Nassa incrassata, *Flem.*—Planaxis minuta, *Risso.*

Animal white, mottled ; tentacula long, far apart, bearing the eyes towards their middle externally.

Common in deep water.

XLI. Murex, *Lin.*

1. erinaceus.

Murex erinaceus, *Lin.* —" Murex decussatus, *Gmel." (Menke)*—Triton erinaceum, *Flem.*

Animal white, speckled with grey ; tentacula approximating, triangular; eyes on their upper surfaces externally, and not far from the tips ; male organ lanceolate.

In deep water. Frequent.

XLII. Fusus, *Lam.*

Subgenus, Fusus.

1. antiquus.

Fusus antiquus, *Lam.* — Murex Antiquus, *Lin.*—Murex despectus, *Penn.*

β. Fusus norvegicus, *Turt.*—" Strombus norvegicus, *Chemnitz*," *Menke.*

Animal white, tentacula triangular.

The normal form of this species is most frequent about Port Erin, at the southern extremity of the island ; the var. *β.* on the scallop banks of the north. The latter never attains the size of the former, is more coarsely striated, and has the interior of the aperture

always deep yellow, and the canal often tinged with pink. The animal of the Fusus antiquus, as well as that of Buccinum undatum, is much used for bait by the fishermen.

2. corneus.

Fusus corneus, *Lam.*—Murex corneus, *Lin.*

Animal white, tentacula lanceolate, eyes towards their bases externally.

Common in deep water, on all the coasts.

Subgenus, Pleurotoma.

3. turricola.

Fusus turricola, *Flem.*—Murex turricola, *Mont.*—Murex angulatus, *Don.*

Very rare. On the north coast.

4. rufus.

Fusus rufus, *Flem.*—Murex rufus, *Mont.*

Very rare. On the east coast in deep water.

5. linearis.

Fusus linearis, *Flem.*—Murex linearis, *Mont.*—Murex elegans, *Don.*—Plurotoma tricolor, *Risso ?*

Rare. On the north coast.

6. purpureus.

Fusus purpureus, *Flem.*—Murex purpureus, *Mont.*—Plurotoma purpurea, *Basterot.*—Mangelia purpurea, *Risso.*—Pleurotoma philberti, *Michaud ?*—Pleurotoma variegatum, *Phill. ?*

Animal white ; end of syphon purplish ; eyes black, subpedicled on the external bases of the slender though rather short tentacula.

Two specimens, dredged in deep water on the coast of Ballaugh, June, 1834. Size of the larger specimen. Lon. 9-10; Lat. 3-10.

7. bamfius.

Fusus bamfius, *Flem.*—Murex bamfius, *Don. Mont.*—Murex harpula, *Brocchi?*

Animal white; tentacula long, filiform; eyes rather central on the external side.

North coast. Not rare.

8. muricatus.

Fusus muricatus, *Flem.*—Murex muricatus, *Mont.*

Animal white; tentacula subulate.

North coast. Not rare.

XLIII. Chenopus, *Phillippi.*

1. pes-pelicani.

Chenopus pes-pelicani, *Phill.* — Rostellaria pes-pelicani, *Lam. Flem.*—Strombus pes-pelicani, *Lin.*—Aporrhis quadrifidus, *Da Costa.*

Test. jun. Murex gracilis, *Brocchi.*

The animal is described by Phillippi.

Rare. Cast on shore at Castletown, Ballaugh.

Fam. Involutae.

XLIV. Cypraea, *Lin.*

1. europaea.

Cypraea europaea, *Mont.*—Cypraea pediculus, var. *Lin.*

β. Cypraea arctica, *Mont.*

Test. jun. Cypraea bullata, *Mont.*

Bulla diaphana, *Mont.*

Animal orange; mantle white, with a black striped dusky border; eyes on bulgings at the external bases of the long, tapering, and terete tentacula. Over the head there is a hood, which, as well as the male organ, is orange. The sides of the foot are regularly striated transversely.

Frequently cast on shore on the north coast: found alive occasionally on the rocks, at very low spring tides. The young shell occurs but seldom.

In the proceedings of the Zoological Society of London, Mr. Harvey opposes the (now generally received) opinion, that Cypraea bullata is the young of Cypraea europaea. It is there said, "Cypraea bullata is found in the same localities as Cypraea pediculus, (europaea is meant), but it may be doubted whether it is the young of that species. It is so comparatively rare that Mr. Harvey has dredged up only six specimens of it, while he has collected more than a hundred of Cypraea pediculus. He possesses, moreover, young individuals of Cypraea pediculus, of a smaller size than specimens of Cypraea bullata. In the latter, the whorls are more produced at the apex, and the shell is so delicate as to be broken by even a slight fall." (Zool. Proc. pt. 3d. 1835.) To this it may be replied, that the comparative size of young and old shells, is not a specific character in this genus; witness Cypraea Arabica.

Fam. Sagaretidae.

XLV. Sigaretus, *Cuv. Gray.*

1. perspicuus.

Sigaretus perspicuus, *Phill.*—Sigaretus haliotoideus, *Flem.*—Bulla haliotoidea, *Mont.*—Helix perspicua, *Lin.*

The animal is described by Montagu ; also by Phillippi.

Very rare. Mr. Wallace found a single specimen, cast ashore in Douglas harbour, 1837.

XLVI. Velutina, *Flem.*

1. laevigata.

Velutina laevigata, *Flem.*—Velutina capuloidea, *Blainv.*—Helix laevigata, *Lin.*—Helix haliotoidea, *Fabr.*—Bulla velutina, *Mull.*—Galericulum laevigatum, *Brown.*

Animal pinkish white, with two obtuse conical tentacula ; the eyes at their external bases.

Not uncommon in deep water on all the coasts.

2. otis.

Velutina otis, *Flem.*—Helix otis, *Turt.*

Animal bluish white.

In crevices of rocks at half tide, with Kellia rubra ; Kirk St. Ann's Head.

Fam. Naticidae.

XLVII. Natica, *Lam.*

1. monilifera.

Natica monilifera, or castanea, *Lam.* ?—Natica glaucina, *Flem.* (not of Lamarck.)—Nerita glaucina, *Mont.* (not of Linnaeus.)

Shell with six rounded whorls, somewhat flattened at their tops; the first largest, minutely striated spirally under the lens, brownish white; the upper whorls with obsolete brown markings. Suture deep. Umbilicus large, not furrowed, *spirally striated* internally. Pillar lip callous, reflected, white, but not covering the umbilicus. Inside brownish. Operculum corneous.

Animal undescribed.

Young shell with the spire much depressed, the upper part of the whorls with regular brown markings.

The spirally striated umbilicus distinguishes this species from all the other British naticae. I have doubts as to this being the shell described by Lamarck under the name of Natica monilifera. In the British Museum, specimens of this shell are labelled, "Natica castanea, *Lamarck.*" My specimens of what I believe to be that species, from the Mediterranean, are certainly not identical with the British shell. Perhaps the giving our species a new name, would be the best mode of removing the confusion. In such case I would propose to name it Natica Nicolii.

Rare on the Manx shores; south coast at Port Erin. I have never seen the animal. This species appears to be generally distributed in Britain, and is common in all collections. Mr. Nicol informs me that it is found buried in sand, at very low tides, in the Frith of Forth.

2. Alderi.

Shell with the spire produced, acute, of five whorls, divided by a shallow suture; the lower whorl largest and rounded; the upper ones nearly flat. Smooth, purplish-brown, with two bands of plain yellow, which are each bordered by two narrow bands of white, spotted with brown. Lower part of the first whorl white; a dark brown band bounds and enters the umbilicus, which is neither grooved nor striated. Pillar lip brown and white, slightly reflected on the umbilicus. Inside brownish white. Operculum corneous.

Young shell with the spire less produced, and the markings paler.

Animal with a produced globular pink head (an proboscis?) having the mouth, which is longitudinal and pear-shaped, in front, below which is a little foot-like process; jaws cartilaginous, square, toothed in front like a saw; tongue like that of a Littorina, but shorter and broader in proportion; mantle pinkish white; between the mantle and head is a sort of veil, which is furnished with two distant triangular tentacula, one of which is colourless, and the other pink, dark brown at the tip, but with no trace of an eye; foot pinkish-white, its sides variegated brown.

This is the most beautiful British species of a beautiful genus, and appears to be as generally distributed on our shores as the last, with which it has hitherto been confounded. Indeed, I had for some time (though not without doubts) regarded it as the young of the last, until my attention was directed to

its own young by that eminent conchologist, Mr. Alder of Newcastle, who kindly sent me specimens. Since then, I have taken the shell of all sizes, so as to leave no doubt of the identity of the larger specimens with the smaller. In the Magazine of Natural History, (vol. ix. p. 191.) I erroneously described the animal of this species as belonging to Natica monilifera; and, having been deceived by the remarkable difference of colour (which is possibly accidental) stated that the animal had only one tentaculum, though further researches have convinced me I was mistaken.

3. Montagui.

Natica rufa, *Mont.*—Natica rufa, *Flem.* (not *Lam.*)—Natica helicina, *Phill.*

Shell with five rounded whorls, divided by a very deep suture, the first largest, and the spire prominent; purplish-brown, or brownish-white, with a white band encircling the upper part of the whorls at the suture; umbilicus deep, and hollowed by a spiral groove, which notches the slightly reflected white pillar lip; inside deep orange. Operculum corneous. Lon. $\frac{5}{10}$; lat. $\frac{1}{8}$.

The animal is white, with a few obsolete brown markings; the mantle and edge of the foot are each bordered by a thread-like brown line; tentacula two, triangularly lanceolate, arising from a sort of veil above the head; whilst the animal is walking, they are reflected back on the shell, and appear to be of no use. No appearance of eyes.

In deep water on the north coast, but rare.

This species appears to me to be the Nerita rufa of Montagu, and agrees very well with the description given by Phillippi of his Natica helicina, which he refers with a query to Brocchi's species of that name. Nearly allied to my shell, but at the same time very distinct, is the Natica helicoides of Johnston. When placed on its mouth, the Natica Montagui resembles a Littorina.

Order. Scutibranchia.

Fam. Calyptracea.

XLVIII. Capulus, *Montfort.*

1. hungaricus.

Capulus hungaricus, *Flem.*—Patella hungarica, *Lin.*—Pileopsis hungarica, *Lam.*

Animal white, tentacula long, filiform; the eyes on a bulging below their centres externally; proboscis brownish.

Shell sometimes white, sometimes rose colour internally. Common on shells and stones in deep water on all the coasts.

Fam. Patelloidea.

XLIX. Emarginula, *Lam.*

1. fissura.

Emarginula fissura, *Lam.*—Patella fissura, *Lin.*

The animal is figured by Muller.

On the Pecten maximus and Pecten opercularis, and other shells: frequent.

L. Fissurella, *Lam.*

1. graeca.

Fissurella graeca, *Lam.*—Patella graeca, *Lin.*—Patella reticulata, *Don.*

Test. jun^r. Fissurella apertura, *Flem.*—Patella apertura, *Mont.*—Sipho radiata, *Brown.*

The animal is described by Phillippi. On the Manx coast, it varies in colour from cream-white to deep orange, approaching scarlet.

On shells, especially Pecten opercularis, in deep water on the north coast. Frequent.

The young shell is seldom taken.

LI. Lottia, *Gray.*

1. testudinalis.

Patella testudinalis, *Mull. Fabr.*—Patella Clealandi, *Sow.*—Patella clypeus, *Brown.*

Animal white, margin of the cloak entire; gill elongato-triangular; tongue like that of patella, but not spinous.

Otho Fabricius observed the remarkable position of the branchus in this animal, but mistook the nature of the organ: he says, "Supra in collo apertura parva, unde emittere potest proboscidem sive tubulum compressum longum albidum dextrum extra corpus prominentum: forsitan membrum ani vel genitale?"—Fauna Groenlandica, p. 385.

On the under surface of stones at very low water. Ballaugh.

? 2. pulchella.

Patella pulchella, *Forbes.* (Mag. of Nat. Hist. vol. viii. p. 591. fig. 61.)

Animal yellowish white, with moderately long tentacula, and the eyes at their external bases; the cloak spotted with pink at regular intervals, margin entire. Unfortunately I was not aware of the creation of the genus Lottia by Mr. Gray, when I examined the living animal, but from what I could observe of some (bad) specimens in spirits, I believe it to be a true Lottia, and nearly allied to the Patella rubella of Fabricius, the animal of which species, he says, resembles that of the Patella testudinalis.

On stones and shells in deep water, at times very common. Never attains one-third the size of Patella tessulata.

Order. Cirrhobranchia.

Fam. Dentalidæ.

LII. Dentalium, *Lin.*

1. entalis, *Lin.*

The animal is described by Deshayes.

Deep water on the north coast. Rare.

Order. Cyclobranchia.

Fam. Patellacea.

LIII. Patella, *Lin.*

1. vulgata, *Lin.*

α veris—ribs but little raised, shell striated.

β costata—ribs much raised.

" Patella albicosta, *Marks*," in Brit. Mus. Test. jun. Patella depressa, *Pennant.*

The animals of the two forms do not differ.

On all the coasts at low water; it is called by the natives " Flitter," and eaten when boiled.

2. pellucida, *Lin.*

Test. jun. " Patella bimaculata."

On the leaves of fuci, not common.

3. cœrulea.

Patella cœrulea, *Mont.*—Patella lævis, *Penn.*

Animal cream-white, margin of the mantle waved.

On the stalks and roots of fuci, common. Many British conchologists think this species identical with the last. Mr. Nicol, however, after a careful study of both species, maintains them to be distinct.

4. tessulata.

Patella tessulata, *Muller.*—Patella virginea, *Fleming.* (not of *Muller*). Patella parva, *Da Costa.*

See Dr. Johnston's note on this species in the Magazine of Zoology and Botany, No. x. Oct. 1837.

Dead shells, which I believe to belong to this species, are frequent among shell-sand at Kiristal near Douglas. In the Hebrides it is common, alive, on small stones at low water.

LIV. Chiton, *Lin.*

1. fascicularis, *Lin.*

Animal brownish white, the foot very broad.

Deep water on the north coast, not common.

2. marginatus.

Chiton marginatus, *Penn.*—C. cinereus, *Lowe.*

Animal brownish white.

Under stones at low water, common. The Manx specimens are sometimes white, and sometimes one-half white and the other half dark grey.

3. ruber.

Chiton ruber, *Lin. Flem. Lowe.*—Chiton laevis, *Penn.*—Chiton crenulatus, *Risso.*

Animal cream-white.

On stones in about ten fathoms water on the north coast.

4. cinereus.

Chiton cinereus, *Lin.*—Chiton asellus, *Lowe*, —Chiton Rissoi, *Payr.* ?

Animal brownish, branchiæ tinged with green.

5. laevis.

Chiton lævis, *Mont.* &c.

On shells in deep water.

CLASS. ACEPHALA.

ACEPHALA TESTACEA.

Order. Branchiopoda.

Fam. Craniadæ.

LV. Orbicula, *Cuv.*

1. norvegica.

Orbicula norvegica, *Lam.*—Criopus anomalus, *Flem.*—Crania personata, *Low.*—Discina ostræoides, *Turt. Lam.* ?—Patella anomala, *Mull.*—Patella distorta, *Flem.* (Ed. Enc.)—Anomia turbinata, *Dillwyn.*

The animal is figured by Muller.

A single specimen dredged at Ballaugh, Oct. 1834.

Order. Lamellibranchia.

Fam. Ostracea.

LVI. Anomia, *Lin.*

1. ephippium, *Lin.*

The animal is given by Poli.

On shells, &c. Not uncommon.

2. Squamula.

Anomia squamula, *Lin.*—A. polymorpha, var. *Phill.*

On fuci, common.

3. undulata.

Anomia undulata, *Turt.*—Ostraea striata, *Mont.*

On shells; common in deep water.

4. cylindrica.

Anomia cylindrica, *Turt.*—A. cymbiformis, *Mat.* and *Rac.*

On fuci, but not frequent.

LVII. Ostræa, *Lin.*

1. edulis, *Lin.*

Test. jun. Ostræa parasitica, *Turt.*

On the north and east coasts plentiful. The oysters on the north coast are extremely large and very coarse, but those on the east coast are esteemed and brought to market. The bank is situated off the village of Laxey.

Fam. Pectinidae.

LVIII. Pecten, *Brugière.*

1. maximus.

Pecten maximus, *Penn.*—Ostræa maxima, *Lin.*

Frequent on the scallop banks, and as well as the next species, used as food when cooked.

2. opercularis.

Pecten opercularis, *Mont.*—Pecten subrufus, *Penn.*—Ostræa opercularis, *Lin.*

Frequent, being the chief inhabitant of the scallop banks.

3. varius.

Pecten varius, *Penn.*—Ostræa varia, *Lin.*

On the scallop banks, but scarce.

4. sinuosus.

Pecten sinuosus, *Turt.*—Pecten pusio, *Penn.*—Pecten distortus, *Mont.*—Ostræa sinuosa, *Lin.*—Hinnites pusio, *Sow.*

Test jun. Pecten pusio, *Turt.*—P. spinosus, *Brown.*

Common in deep water. Often found free in the cavities of old shells, and is then regular in form, but I have never observed a byssus. When young, it is more elongated and generally regular, constituting the Pecten pusio of Turton. [Biv. Brit. t. 17, fig. 2.] I do not think the circumstance of its adhering to stones and shells by one valve, a sufficient reason for transferring it to the genus Hinnites, as Mr. Sowerby has done. [See Zool. Journ. vol. 3.]

5. obsoletus.

Pecten obsoletus, *Penn.*—Ostræa lævis, *Mat.* and *Rac.*

Not unfrequent on all the coasts. It varies greatly in the presence, absence, and number of ribs.

LIX. Lima, *Brugière.*

1. fragilis, (See Mag. of Nat. Hist. v. 8, p. 594, fig. 65,) Lima fragilis, *Flem.*—L. bullatus, *Turt.*—Pecten fragilis, *Mont.*

The shell is translucent, very fragile, finely striated, and closed, or nearly closed, on all sides. The animal has the filaments long, and of a pale crimson. Not uncommon in deep water, where it is found in

the cavities of old shells. Dimensions of the largest specimen in my collection : L. $\frac{8}{10}$; B. $\frac{6}{10}$; Th. $\frac{5}{10}$.

2. tenera, *Turton ?* (See *Forbes*, in Mag. Nat. Hist. v. 8, p. 594, fig. 64.)

Shell much stronger than the last, dilated towards the frontal margin, compressed, gaping on all sides, ribbed longitudinally. Animal having the mantle yellowish-white, bordered with bright red ; filaments pale yellow tipped with red, and short as compared with those of the other two species.

In deep water on the north coast ; not frequent.

Dimensions : L. 1. $\frac{2}{10}$; B. $\frac{8}{10}$; Th. $\frac{5}{10}$.

3. inflata, *Lam.?* (See Mag. of Nat. Hist. v. 8, p. 593, fig. 63.)

Shell strong, inflated, with rough longitudinal ribs, crossed by lines and furrows of growth ; gaping on all sides widely. Animal with very long bright red filaments.

In deep water on the north coast ; rare.

Dimensions : L. $\frac{14}{10}$; B. $\frac{9}{10}$; T. $\frac{9}{10}$.

A Norwegian naturalist, M. Sars of Bergen, has figured this species with its animal, and refers it with a query to the Lima linguatula of Lamarck.

Fam. Arcacea.

LX. Arca, *Lin.*

1. tetragona, *Poli.*

Shell oblong, quadrangular, very tumid, gaping in front, brownish-white, with regular longitudinal and irregular transverse striæ ; an oblique rib from the

beaks to the anterior angle of the anteal margin; hinge straight, with the teeth fine, and numerous posteally, and large and few anteally; inner margin denticulated. Epidermis brown, fringing the margin.

Dimensions of the largest specimen: L. $\frac{7}{10}$; B. 1.

Animal with the foot thick, rose-colour; the mantle white, with short filaments. Foot in one specimen furnished with a horny process or operculum, adapted to the gape of the shell.

I dredged two living specimens of this fine species in twenty fathoms water, off the coast of Ballaugh, in September 1835. They were found imbedded in the mud filling the cavities of dead Modiolæ. Dr. Turton first noticed the species as British; the locality he gives is "the Calves, west of Ireland." See British Bivalves, p. 169, t. 13, fig. 1.

LXI. Pectunculus, *Lam.*

1. pilosus.

Pectunculus pilosus, *Lam.*—Area pilosa, *Lin.*—Area glycimeris, *Penn.*

α. Pectunculus pilosus, *Turt.*

β. Pectunculus glycimeris, *Turt.* (not of *Lin.*)

γ. Pectunculus undatus, *Turt.*

Animal cream-white, margin of foot even.

Common in deep water on all the coasts; especially abundant off Douglas Head. The varieties α, β, and γ, are found together, and are probably only the same species in different stages of growth. Is not the Pectunculus decussatus of Turton, the young of P.

pilosus ? I have a specimen belonging to the variety γ, in which the teeth of the hinge are obsolete.

LXII. Nucula, *Lam.*

1. margaritacea.

Nucula margaritacea, *Lam.*—Nucula nucleus, *Turton.*—Area nucleus, *Lin.*

Animal cream-white, the edges of the foot ciliated. In cavities of dead bivalves, not uncommon.

LXIII. Mytilus, *Lin.*

Subgenus Mytilus, *Lam.*

Fam. Mytilacea.

1. edulis, *Lin.*

β. Mytilus pellucidus, *Penn.*

Abundant on the rocky coasts. β. less frequent, and not in general gregarious, as is the case with α. The variety *incurvatus* probably exists on the Manx coasts also.

Subgenus Modiolus, *Lam.*

2. vulgaris.

Mytilus modiolus, *Lin.*—Modiola vulgaris, *Flem.*—Modiola papuana, *Lam.*—Modiola modiolus, *Turt.*—Test. jun.—Mytilus barbatus, *Lin.*—Modiola barbata, *Lam.*—Mytilus curtus, *Penn.*

Common in deep water on all the coasts. Animal figured by Muller. The Modiola Tulipa of Lamarck has been confounded with this species by British authors. It is found on the south coast of England, and in the Frith of Forth.

3. discrepans.

Mytilus discrepans, *Mont.*—Modiola discrepans (*Lam.* ?) *Turt.*—Mytilus discors β. *Mat.* and *Rac.*

At the roots of fuci ; common.

I have never found the shell called by some Modiola nigra, and generally placed in British collections as the adult of this species, on the Manx coast, though the common form abounds.

4. marmoratus.

Mytilus discors, *Mont.* — Modiola discors, *Turt.*

In the roots of fuci, on the northern shores.

I have changed the specific appellation of this species, as it is not the Mytilus discors of Linnæus.

Fam. Naiidæ.

LXIII. Unio, *Retz.*

1. margaritifera, *forma Roissyi.*—Unio Roissyi, *Michaud.*

Shell oblong, thick, tumid, transversely striate ; beaks depressed, acute, decorticate ; cardinal tooth thick, subacute, lateral teeth obsolete. Epidermis black, transversely striate. L. 2 inches ; B. $4\frac{1}{4}$.

At the meeting of the British Association in Liverpool, Mr. Gray announced that Mr. Gilbertson had discovered the Unio Roissyi in Yorkshire, and Mr. Wallace informs me that Mr. Gilbertson had taken the Isle of Man shell also, and considered it specifically identical with the Yorkshire specimens. I had been in the habit of considering the Manx shell

as a remarkable variety of the Unio Margaritifera, (*Lin. &c.*) and exhibited it as such three years ago to the Royal Physical Society of Edinburgh. The collection and observations of Mr. Nicol have confirmed me in that opinion, he having in his cabinet all the gradations of form, from Unio elongata, *Lamarck*, to the Unio Roissyi of *Michaud*, collected by him in the rivers of Scotland. Mr. Lea of Philadelphia, in his lately published synopsis of the Naiides, also places Unio Roissyi as a variety of U. Margaritifera. Michaud's specific characters are these :—

"Unio testâ oblongâ, atrâ, rugosâ, crassâ, tumidâ, undiquè hiante, anterius obtuse-angulatâ, posterius latiore, superne arcuatâ ; intus carneo-cœrulæo-margaritaceâ, viridi maculatâ ; natibus depressis, decorticatis ; dente cardinali crasso, parvo, subacuto, laterali subnullo."—(Mich. Comp. p. 112, pl. 16, f. 28.)

In the Black river ; common near Kirk Braddan Church. It was formerly much sought after by the inhabitants for the sake of the pearls, which it not unfrequently contains.

Fam. Conchacea.

LXIV. Cardium, *Lin.*

1. aculeatum, *Lin.*

Test. jun. C. ciliare, *Lin.*

The animal is described by Risso.

Dead valves of this species are sometimes cast on shore at the Point of Ayre ; but I have never taken it alive on the Manx coast.

2. elongatum, *Mont.*

On the scallop banks, but rare.

3. edule, *Lin.*

Animal described by Poli.

At Ramsay; frequent in sand at the mouth of Sulby river.

4. laevigatum, *Lin.*

Test. jun. Cardium serratum, *Turt.*

Animal. See Poli.

Frequent in deep water.

LXV. Donax, *Lin.*

1. trunculus.

Donax trunculus, *Lin.*

Derbyhaven bay.

LXVI. Tellina, *Lin.*

1. tenuis.

Tellina tenuis, *Mont.*—T. planata, *Penn.*—T. balaustina, *Dillw.*—T. exigua, *Poli.*

Douglas, rare. Frequent at Ramsay.

2. solidula.

Tellina solidula, *Mont.*—T. Balthica, *Lin.*—T. zonata, *Dillwyn.*—T. carnaria, *Penn.*—Psammobia solidula, *Turt. Flem.*

Douglas, Ramsay, and Derbyhaven.

3. crassa.

Tellina crassa, *Penn.*—Tellina reticulata, *Mat.* and *Rac.*—Tellina proficua, fausta, and rigida, *Pult.*—"Arcophagia crassa, *Leach*," *Brown.*

Douglas bay, and north coast; rare.

LXVII. Amphidesma, *Lam.*

1. tenuis.

Amphidesma tenuis, *Lam. Flem.*—Ligula tenuis, *Mont.*—Mactra tenuis, *Mont.*—"Abra tenuis, *Leach.*"

In cavities of dead shells from deep water on the north coast.

LXVIII. Lucina, *Lam.*

1. radula.

Lucina radula, *Lam.*—Tellina radula, *Mont.*—Venus borealis, *Penn.*—Venus spuria, *Dillwyn.*

Test. jun.—Lucina alba, *Turt.?*

Derbyhaven Bay, frequent.

2. undata.

Lucina undata, *Lam.*—Venus undata, *Penn.*—Loripes undatus, *Menke.*—"Mysia undata, *Leach.*" (*Lam.*)

On the north coast in deep water; not rare.

LXIX. Cyprina, *Lam.*

1. islandica.

Cyprina islandica, *Lam.*—Venus islandica, *Lin.*—Venus mercenaria, *Penn.*

The animal is figured by Muller.

On the north and east coasts, but rare.

LXX. Mactra, *Lam.*

1. subtruncata.

Mactra subtruncata, *Mont.*—M. stultorum, *Penn.*—M. deltoides, *Lam.*

Douglas; Ramsay Bay.

2. elliptica.

Mactra elliptica, *Brown.*

As I am not acquainted with any published description of this very distinct species, I give the characters—(a figure may be found in Captain Brown's illustrations.) Shell transversely ovate, sub-triangular, nearly equilateral, obsoletely striated transversely; margin prominent between the beaks and the angles; lateral teeth striated. Colour yellowish-white.

Br. $1\frac{1}{8}$; L. $\frac{6}{8}$; Thickness, $\frac{5}{8}$.

In the collection of the Jardin des Plantes, are specimens of a shell very near to, if not identical with this species, labelled "Mactra semistriata."

In deep water on the north coast; not frequent.

LXXI. Goodallia, *Turt.**

1. triangularis.

Mactra triangularis, *Mont.*—Goodallia triangularis, *Turt.*—Mactroidea triangularis, *Brown.*

Entangled in the byssi of Modioli, from deep water off Douglas, but rare.

2. minutissima.

* The shells of this genus have been supposed by some British conchologists to be the young of Astarte. I have in my collection the young of Astarte scotica, no larger than Goodallia triangularis, yet presenting all the characters of the adult shell.

Goodallia minutissima, *Turt.*—Mactra minutissima, *Mont.*

With the last, but rarer.

LXXII. Kellia, *Turt.**

1. suborbicularis.

Kellia suborbicularis, *Turt.*—Mya suborbicularis, *Mont.*—Tellimya suborbicularis, *Brown.*—Bomia inflata, *Phill.*—Erycina Geoffroyi, *Payr.* ?—Amphidesma physoides, *Lam.* ?

In the cavities of dead bivalves from deep water, frequent; more rarely in crevices of rocks at very low water.

Animal described by Johnston. (Trans. Berw. Nat. Hist. Club.)

2. rubra.

Kellia rubra, *Turt.* — Cardium rubrum, *Mont.*—Tellina rubra, *Turt.* (Conc. Dict.) "Lasoea rubra, *Leach*" *Brown.*—"Autonoe rubra" (Coll. Brit. Mus.)—Bomia seminulum, *Phill.*

In crevices of slate rocks at low water, and among the tufts of corallina officinalis. Very abundant.

LXXIII. Cyclas, *Drap.*

1. cornea.

Cyclas cornea, *Lam.*—Cycals rivalis, *Drap.*

* "Animal (Bomia) ab Erycina differt sinu palliari nullo, nota gravissima."—*Phill. Test. Sic.* p. 13.

—Tellina cornea, *Lin.*—Tellina rivalis, *Mull.*—Cardium corneum, *Mont.*

The animal is described by Jenyns.

Ditches in the Curraghs, abundant.

2. calyculata.

Cyclas calyculata, *Drap.*—" Cyclas tuberculata, *Alt.*" (*Menke.*)—C. lacustris, *Turt.* —Cardium lacustre, *Mont.*—Tellina lacustris, *Lin.*

Pools in the northern parishes. The animal is described by Jenyns.

LXXIV. Pisidium, *Pfeiffer.*

1. pulchellum.

Pisidium pulchellum, *Jenyns.*—" Pera pulchella, *Leach.*" *Jenyns.*—Pisidium fontinale, *Brown.*—Cyclas fontinalis, *Alder.*

The animal is described by Jenyns.

Ditches and springs, especially in the north.

LXXV. Astarte, *Sowerby.**

1. danmoniensis.

Artarte danmoniæ, *Flem.*—Venus danmoniensis, *Mont.*—Crassina danmoniensis, *Lam.* —Crassina sulcata, *Flem.*—Astarte incrassata, *De la Jonk.* — Venus incrassata,

* M. de la Jonkaire says, that the teeth of Astarte are ordinarily striated, as in Trigonia. (Mem. de la Soc. d'Hist. Nat. de Paris, vol. i. p. 127.) I have never found such to be the case with the British species.

Brocchi.—Tellina fusca, *Poli.*—"Venus petagnae, *Cost.*" *Phill.*

Deep water on the north and east coasts ; rare.

2. scotica.

Astarte scotica, *Flem.*—Venus scotica, *Mat.* and *Rac. Lam.*—Crassina scotica, *Turt.*

Deep water on the north coast ; rare.

The Crassina depressa and elliptica of Brown's Illustrations appear to me to be forms of this species.

LXXVI. Artemis, *Poli.*

1. exoleta.

Venus exoleta, *Lin.*—Cytherea exoleta, *Lam.*—Capsa exoleta, *Risso.*—Exoleta orbiculata and radula, *Brown.*

The animal is described by Poli.

Rare on the Manx coasts. The Cytherea exoleta and sinuata of Turton's British Bivalves, are both referable to this species, the former being the young shell.

2. lincta.

Venus lincta, *Pult.* — Venus exoleta, var. *Penn. Mat. Mont.*—Venus excisa, *Dillw.*—Cytherea lincta and lunaris, *Lam.*—"Asa lineata, *Defrance.*" *Bast.*—Exoleta lincta, *Brown.*

Common in deep water on the east coast, off Douglas Head.

LXXVII. Venus, *Lin.*

1. cassina.

Venus cassina, *Lin.*—Venus erycina, worn, *Penn.*—Clausina cassina, *Brown.*

Test. jun. Venus Rustericii, *Payr.*

(*β.* Venus reflexa, *Laskey.*)

Deep water on various parts of the coast.

2. fasciata.

Venus fasciata, *Mont.*—Venus paphia, *Pult.*—Clausina fasciata, *Brown.*

(*β.* Venus Brogniartii, *Payr.*)

Test. jun. Ortygia costata, *Brown.*

Animal white, extremities of the syphons orange.

Deep water on gravelly ground ; common.

3. gallina.

Venus gallina, *Lin.*—Venus rugosa, var. *Penn.*—Venus striatula, *Don.*—" Ortygia gallina, *Leach.*" *Brown.*—Venus casina, *Pult.*

Ramsay Bay.

4. Pennantii.

Venus rugosa, *Penn.*—Venus laminosa, *Laskey.* — Venus cancellata, *Don.* — Venus gallina, v. *Menke.*—Venus senilis, *Brocchi.*—" Ortygia rugosa, *Leach.*" *Brown.*

Deep water off Douglas Head.

As this is not the Venus rugosa of Linnaeus, I have thought it right to change the specific appellation, naming it after its discoverer.

5. ovata.

Venus ovata, *Penn.*—Venus radiata, *Brocchi.*

—Venus pectinula, *Lam.*—"Venus spadicea, *Ren.*" *Phill.*—Cytherea ovata, *Flem.* —Timoclea ovata, *Leach.*" *Brown.*—Cardium striatum, *Walker.*

Animal white.

In deep water on all the coasts, but not frequent.

6. virginea.

Venus virginea, *Lin.*—Venus rhomboides, *Penn.*—Venus lactea, *Poli.* — Venerupis virginea, *Flem.*

[*β.* Venus sarniensis, *Turt.*]

Animal white, siphons connected for half their lengths, the anterior tube tipped with purple.

Very common in deep water on all the coasts.

7. pullastra.

Venus pullastra, *Wood. Mont.*—Venerupis pullastra, *Flem.* — Pullastra vulgaris, *Sow.*

β. perforans.

Venus perforans, *Mont.*—Venerupis perforans, *Lam. Turt. Flem.*

Animal cream white. Syphons united almost to their extremities, which are tinged with orange pink.

α. rare; in sand at low water, Ballaugh; Douglas Bay. *β.* In limestone and roots of sea weeds, not uncommon.

LXXVIII. Corbula, *Brugière.*

1. ovata, *n. s.*

Corbula testâ ovato-oblongâ, transversim sub-

striatâ, albidâ, epidermide fusco; natibus depressius culis. Lon. $\frac{2}{10}$; Lat. $\frac{4}{10}$.

Shell ovato-oblong, almost aequilateral, with obsolete transverse striae; white, covered with a brown epidermis, which is worn away at the upper part of the shell, but bears the traces of regular transverse striae towards the margin; the anterior extremity is slightly truncate, the posterior rounded; beaks depressed; translucent. In form, this species resembles Corbula rosea, but is more elongated transversely. The teething is very similar

Taken from the root of a fucus cast on shore at Ballaugh.

LXXIX. Mya, *Lin.*

1. truncata, *Lin.*

Dead valves are not uncommon on the north coast.

2. Swainsoni.

Sphenia Swainsoni, *Turton.*

In roots of sea weeds, and cavities of dead shells; not uncommon. I am aware that this shell is considered by some of our best conchologists to be the young of Mya arenaria. After a careful comparison of undoubted specimens of the young Mya arenaria with my Manx shell, I am induced to consider the latter distinct,—a conclusion which the absence of Mya arenaria from the Manx shores would go far to confirm.

LXXX. Lutraria, *Lam.*

1. elliptica.

Lutraria elliptica, *Lam.*—Lutraria vulgaris, *Flem.*—Mactra lutraria, *Lin.*

Ballaugh, (dead valves,) August 1837. Port Erin. Mr. Wallace.

LXXXI. Psammobia, *Lam.*

1. ferroensis.

Psammobia ferroensis, *Lam.*—Tellina ferroensis, *Mont.*—Tellina incarnata, *Penn.*—"Tellina Bornii, *Gmel.*" *Menke.*—Tellina trifasciata, *Don.*

On the north coast. Rare.

2. tellinella.

Psammobia tellinella, *Lam.* — Psammobia florida, *Turt.* (not of *Lam.*)

On the north coast; not uncommon.

This is probably the shell to which Montagu alludes, when, speaking of "Solen vespertinus," he says, "not uncommon of a small size at King's Bridge, Devonshire, and other parts of that coast." (Test. Brit. p. 54.) The Psammobia florida of Lamarck, with which Dr. Turton confounded this species, is probably that form of Psammobia vespertina, which is found on the Scotch coast at Loch Ryan by Mr. Nicol, and which constitutes the "Psammobia vespertina, var. 7," of Phillippi.

LXXXII. Solen, *Lin.*

1. siliqua, *Lin.*

The animal is described by Phillippi.

At Port Erin; common. Eaten.

2. ensis, *Lin.*

The animal is described by Phillippi.

On the scallop banks, north and east coasts; common.

3. strigilatus.

Solen strigellatus, *Lin.*—Psammobia strigillatus, *Turt. Flem.*

(α. Testa rosea, major, striis 17—25.)

β. Testa candida, minor, striis 32—25.

" Solen candidus, *Renieri.*" (*Phill.*)

A single valve of the form β. came up in the dredge off the coast of Ballaugh, September 1836. The animal of this species is described by Phillippi.

LXXXIII. Saxicava, *Lam.*

1. rugosa.

Sub. sp. 1. rugosa.

Saxicava rugosa, *Lam.*—Hiatella rugosa, *Flem.*—Mytilus rugosus, *Lin.*—Mya elongata, *Brocchi.*—Rhomboidus rugosus, *Blain.*

β. Saxicava pholadis, *Lam.*

Test. jun. Hiatella oblonga, *Turt.?*

In cavities of limestone, and old shells.

Sup. sp. 2. artica.

Hiatella arctica, *Flem.*—Mya arctica, *Fabr.*—Mytilus praecisus, *Mont.*—Saxicava arctica, *Phill.*

Test. jun. Solen minutus, *Lin.*—Hiatella minuta, and Anatina arctica, *Turton.*

In cavities of shells, and roots of sea weeds ; common.

Fam. Tubicolae.

LXXXIV. Pholas, *Lin.*

1. crispata, *Lin.*

Valves are occasionally thrown ashore at Douglas, but it can scarcely be reckoned an inhabitant of the Manx coast.

ACEPHALA NUDA.

Order. Heterobranchia.

Fam. Ascidiae.

Ascidia, *Lin.*

Sub-gen. Pandocia.

1. conchilega.

Pandocia conchilega, *Flem.*—" Pandocia mytiligera, *Savig.*" (*Flem.*)—Ascidia conchilega, *Mull.*

Not unfrequent.

Sub-gen. Clavellina.

2. lepadiformis.

Ascidia lepadiformis, *Mull.* — " Clavellina lepadiformis, *Savig.*" *Flem.*

Rare.

Sub-gen. Pyrena.

3. prunum.

Ascidia prunum, *Mull.*—Pyrena prunum, *Flem.*

Frequent.

Sub-gen. Ciona.

4. intestinalis.

Ascidia intestinalis, *Lin.*—A. corrigata, *Mull.* —Ciona intestinalis, *Flem.*

Rare ; from Laxey bank.

Sub-gen. Phallusia.

5. mentula.

Ascidia mentula, *Mull.*—Phallusia mentula, *Flem.*

North coast ; not rare.

APPENDIX.

1. Melibœa.

The genus Melibœa was instituted by M. Sander Rang, for some pelagian Mollusca observed by him on floating marine plants, in the seas around the Cape of Good Hope. The structure of the branchiae and tentacula of my Manx animal evidently associate it with Rang's genus, whilst the absence of capital appendages indicate its being the type of a subgenus. I have not seen the characters of the genus Doto of Ocken ; but as all the references to that genus which I have met with, indicate a near relation to the animal under consideration, I have adopted that title for the division proposed, in preference to creating a new, and perhaps useless synonym. The Doris pinnatifida of Montagu, (Tritonia pinnatifida of Cuvier,) appears to belong to the normal section of the genus Melibœa, judging from the figure and remarks by Dr. Johnston, in the eighth volume of the Magazine of Natural History.

II. Buccinum.

In looking over Mr. Gray's excellent paper on Testaceous mollusca, in the Transactions of the Royal Society for the year 1834, I observe that he attributes the differences between the forms α. and β. of Buccinum undatum, to the circumstance of the former (Buccinum undatum,) living in rough water, whilst the latter (Buccinum striatum of Pennant,) inhabits the smooth water of harbours. But such is not the case on the Manx coast, where the form "striatum" inhabits in abundance the most stormy part of the neighbouring sea—the strait between the Isle of Man and the Mull of Galloway. In the Frith of Forth, comparatively sheltered, the Buccinum undatum is almost always of the variety α. There is a third form of the Buccinum undatum, which is not rare on many parts of the Scottish coast, and which I have also observed near Bergen, in Norway. It is a dwarf, generally thin, but ribbed like the form α, and always having the aperture deeply tinged with purple. It inhabits pools, &c., near low water mark, and is frequent in the Frith of Forth. It might be appropriately distinguished as Buccinum undatum γ. littorale.

III. Fusus.

I have in my collection a worn specimen of a Fusus, apparently undescribed, which was cast on shore on the north coast of the Isle of Man. It has the spire produced, with five whorls, slightly rounded and crossed by strong longitudinal ribs, the interstices

of which are wrinkled by strong spiral striae, alternately larger and smaller; the outer lip of the ovate aperture is toothed internally, and strengthened externally by a strong rib. The canal is short, and slightly oblique, and there are traces of a callosity at the junction of the outer lip with the columella.

The specimen is $1\frac{2}{10}$ long, by $\frac{7}{10}$ broad, and of a yellowish white colour. See the figure.

IV. Natica.

It is strange that the true nature of the animal of the genus Natica should so long have remained in doubt, especially as species of the genus inhabit most seas, and are by no means difficult to procure alive. Adanson's "Natice, No. 1," is evidently a Nerita, though the three other species he figures are true Naticae. His remark on the animal of his No. 4, "m'a paru semblable à celui de la première espece," (p. 177,) seems to have misled succeeding authors. Deshayes, in his article Natica, (Dict. Class. d'Hist. Nat.) actually describes the "Natice marron," (Natica castanea,) as having four tentacula, with the eyes on two penduncles; and Rang gives similar characters in his Manuel des Mollusques. Lansdowne Guilding, if I recollect right, was the first to describe a Natica fully and correctly, (Lin. Trans. vol. 16.) and more lately, Phillippi has described and figured the animal of the true Natica glaucina, and described that of Natica mille punctata. Guilding conjectured that the Naticae, with calcareous opercula, formed a

distinct genus from those with corneous opercula, distinguishing the latter (to which section belonged the animal he described,) by the name of Naticina. But such distinction does not appear to be generic as regards the animal. Of Natica mille punctata, which has a calcareous operculum, Phillippi observes, "Animal eandem structuram offert à Natica glaucina," which latter has a corneous operculum. The animal of two species of calcareous-operculated Naticae, which I had the good fortune to obtain during a visit to Algiers in May last, exactly agreed in generic character with the British corneous-operculated species I had examined at home, excepting that one of the two presented a most remarkable anomaly,—the presence of eyes. These eyes are sessile, and situated at the junction of the tentacular veil with the body, almost directly under the respective tentacula. No such organs existed in the other species I examined, and I have searched for them in vain in the British species. It seems to me that the eye is a specific, and not a generic organ in the family. Colour is decidedly specific among the Naticidae.

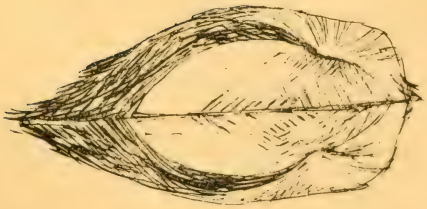
Besides the British species of Naticae previously noticed, there is another by no means rare on many parts of the coast, which is supposed by many to be a variety of Natica nitida of Donovan, and is probably that author's Natica intricata. Mr. Alder refers it to the Natica Valenciensii of Payraudeau. The specimens in my collection, which I owe to the kindness of my friend Dr. Knapp, who obtained them at St.

Andrews, exactly agree with the figure and description given by Phillippi of his Natica intermedia, which in his appendix he refers to the Natica marochiensis of Lamarck.

1 Eubranchus tricolor
2 Doris Flemingii. α
3 Doris Flemingii. β.
4. Melibaea (Doto) fragilis
5 Tritonia Hombergii. jun.?

II.

1. *Natica monilifera junr.* 2. *umbilicus*
3, 4. *Natica montaqui.* 5 *umbilicus*
6. *Natica Aldrii.* 7. *umbilicus*
8. 9 *Corbula ovata.*



Fusus. Novæ Spec.?

and

Arca tetragona.